I/WE CLAIM:

1. An apparatus comprising:

a sterile tunnel for surrounding a plurality of aseptically sterilized containers with pressurized sterile air;

a valve head for controlling the flow of an aseptically sterilized product by opening and closing an outlet port of a nozzle carrying the aseptically sterilized product;

a first end of a valve stem attached to the valve head;

a second end of the valve stem attached to a valve actuator system for displacing the valve stem;

an opening in a wall of the sterile tunnel through which the valve stem passes; and

a flexible diaphragm attached to the valve stem and to an outer peripheral portion of the opening in the wall of the sterile tunnel for preventing contaminants from passing into the sterile tunnel through the opening in the wall of the sterile tunnel.

2. The apparatus of claim 1, wherein the container is a bottle.

3. The apparatus of claim 1, further including:

a tank for containing a pressurized supply of the aseptically sterilized product; and

a measuring device connected to the tank for measuring an amount of the product flowing from the tank to the valve.

4. The apparatus of claim 3, wherein the tank is pressurized with sterile air.

5. The apparatus of claim 3, further including a level measuring device for measuring the level of the product in the tank.

6. The apparatus of claim 3, wherein the measuring device is a volume flow meter.

7. The apparatus of claim 6, wherein the volume flow meter is a magnetic flow meter.

8. The apparatus of claim 3, wherein the measuring device is a mass flow meter.

9. The apparatus of claim 1, wherein the diaphragm comprises a material for not contaminating the aseptically sterilized product.

10. The apparatus of claim 9, wherein the diaphragm material is selected from the group consisting of ethylene-propylene-dieneterpolymers, fluoroelastomer and polytetrafluoroethylene.

11. An apparatus comprising:

a sterile tunnel for surrounding a plurality of aseptically sterilized containers with pressurized sterile air;

a nozzle for carrying an aseptically sterilized product into the sterile tunnel;

a valve head for controlling the flow of aseptically sterilized product by opening and closing an outlet port of the nozzle;

a first end of a valve stem attached to the valve head;

a second end of the valve stem attached to a sealed actuator system for displacing the valve stem, wherein the valve head, the valve stem and the sealed actuator system are surrounded by the sterile tunnel;

a control conduit connecting the sealed actuator system with a control system;

an opening in a wall of the sterile tunnel through which the control conduit passes; and

a sealing member for sealing the control conduit within the opening in the wall of the sterile tunnel.

12. The apparatus of claim 11, wherein the container is a bottle.

13. The apparatus of claim 11, wherein the sealed actuator system is an electromagnet system.

14. The apparatus of claim 13, wherein the control conduit is an electrical cable.

15. The apparatus of claim 11, wherein the sealed actuator is a pneumatic actuator.

16. The apparatus of claim 15, wherein the control conduit is a pneumatic hose.

17. The apparatus of claim 11, further including:

a tank for containing a pressurized supply of the product; and

a measuring device connected to the tank for measuring an amount of the product flowing from the tank to the valve.

18. The apparatus of claim 17, wherein the tank is pressurized with sterile air.

19. The apparatus of claim 17, further including a level measuring device for measuring the level of the product in the tank.

20. The apparatus of claim 17, wherein the measuring device is a volume flow meter.

21. The apparatus of claim 17, wherein the measuring device is a mass flow meter.

22. A method comprising:

controlling the flow of an aseptic product using a valve;

surrounding a region where the aseptic product exits the valve with a sterile region; and

controlling the opening or closing of the valve with a sealed actuator, wherein the sealed actuator is surrounded with the sterile region.

23. The method of claim 22, further including providing a tank for containing a supply of pressurized aseptic product flowing to the valve.

24. The method of claim 23, further including providing a measuring device for measuring the amount of pressurized aseptic product flowing from the tank to the valve.

25. The method of claim 22, further including providing a second apparatus wherein the container is filled to a first level with the product exiting from the first apparatus, and the container is filled to a second level with the product exiting from the second apparatus.

26. The method of claim 24, further including:

exposing the valve, an interior surface of the tank, and an interior surface of the measuring device to steam;

covering an exit of the valve; and

allowing a build-up of steam pressure inside the tank to above a temperature of about 250°F, a steam pressure of about 50 psig, for about 30 minutes.

27. The method of claim 20, further including:

uncovering the exit of the valve; and

providing sterile air to reduce the temperature of the valve, the interior surface of the tank, and the interior surface of the measuring device to the temperature of the product.

28. An apparatus comprising:

a sterile tunnel for surrounding a plurality of aseptically sterilized containers with pressurized sterile air;

a valve for controlling the flow of an aseptically sterilized product through an outlet port of a nozzle;

a plurality of flow passages formed between an inner wall of the nozzle and a plurality of indentations on an outer surface of the valve, wherein the plurality of flow passages transport the aseptically sterilized product to the outlet port;

a valve seat in the nozzle for stopping the flow of aseptically sterilized product through the plurality of flow passages;

a sealed actuator system for displacing the valve into an open position; and

a control conduit connecting the sealed actuator system with a control system.

29. The apparatus of claim 28, wherein the container is a bottle.

30. The apparatus of claim 28, further including:

a tank for containing a pressurized supply of the aseptically sterilized product; and

a measuring device connected to the tank for measuring an amount of the aseptic product flowing from the tank to the valve.

31. The apparatus of claim 30, wherein the tank is pressurized with sterile air.

32. The apparatus of claim 30, further including a level measuring device for measuring the level of the product in the tank.

33. The apparatus of claim 30, wherein the measuring device is a volume flow meter.

34. The apparatus of claim 33, wherein the volume flow meter is a magnetic flow meter.

35. The apparatus of claim 30, wherein the measuring device is a mass flow meter.

36. The apparatus of claim 28, wherein the sealed actuator system is an electromagnet for displacing the valve into an open position allowing the aseptically sterilized product to flow through the plurality of flow passages and through the outlet port into the container.

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37. A method comprising:

controlling the flow of an aseptic product through a nozzle using a valve;

surrounding a region where the aseptic product exits the valve with a sterile region; and

displacing the valve with an electromagnetic actuator, wherein an electrical current applied to the electromagnetic actuator displaces the valve into an open position allowing the aseptic product to flow through an outlet port of the nozzle.

38. The method of claim 37, wherein an outer surface of the valve includes indentations for forming aseptic product flow passages between an inner wall of the nozzle and the outer surface of the valve for transporting the aseptic product to the outlet port of the nozzle.

~~39~~ 17. The method of claim ~~37~~ 16, further including providing a pressurized aseptic product into the nozzle.

~~40~~ 18. The method of claim ~~39~~ 17, further including removing the electric current to the electromagnet actuator allowing the

valve to be displaced by the pressurized aseptic product into a closed position sealing the outlet port of the nozzle.

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